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Original Communications.

A REMARKABLE RECOVERY FROM ABDOMINAL SECTION.

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MRS. L., a young and healthy woman, has borne two children. The first was born in June, 1871; the second, April 9th, 1873.

In July, 1872, a tumor was discovered in the abdomen, on the right side, half way between the ribs and groin, as large as a butter-nut, and movable under the skin. It slowly increased, but did not interfere with pregnancy. The last child was a male, weighing nine pounds. The labor was natural. The mother was up and dressed ten days after the labor. She nursed the child one month, when it died suddenly, in convulsions, in May, 1873.

The tumor began to grow rapidly after the birth of the last child. The patient suffered chiefly from weight and distention, but not from pain.

June 20, 1873, she was sent to consult me, by Dr. A. C. Walker, of Greenfield.

On examination, it is found that an oval, hard mass, somewhere between an ostrich egg and a small musk-melon in size, occupies the right side and part of the centre of the abdomen. At one point, near the umbilicus, it seems adherent to the thinned skin. Otherwise, it is freely movable, and can be swung from side to side. There is no sign of softening, œdema or fluid. It is dull on percussion, though the resonant sound of the bowels is transmitted through it. When the patient tries to rise, while lying on her back, thereby putting the abdominal muscles in contraction, the tumor becomes firmly fixed. The hand can be pressed in between the tumor and the pubes. The pelvis is empty. The uterus is normal in size, position, depth and mobility. There is no bad symptom from the bladder, or rectum. The patient is otherwise in pretty good health, though a little anæmic. She is very urgent for an operation, as some physicians have told her that the tumor could be taken out with ease. The important points to determine are these: Is the tumor extra- or intra-peritoneal? Is it under the abdominal muscles? Is it adherent to the abdominal walls? Can it be removed?

There appears no evidence of any pedicle, or attachment deeply. It is manifestly neither ovarian, nor uterine. A tumor of the parietes, it may or may not involve the peritoneum.

In response to the earnest solicitation of the patient, it was finally decided that an exploratory operation should be tried; that if the tumor was outside the peritoneum its delivery should be attempted; otherwise, that it should be left alone.

Operation, June 26, 1873.—In a farm-house, in a mountainous region, where the hygienic surroundings were excellent. I was assisted by Drs. A. C. Walker, H. Temple and J. R. Fairbanks. The patient was etherized, and carefully wrapped in blankets. The place selected for the incision was about two inches to the right of the umbilicus. Here, a vertical cut, about four inches long, was made. My design was to cut over the rectus, rather than in the linea alba, that I might thus see the relation of the muscular fibres to the tumor. The knife penetrated at once into the tumor, without any appearance of muscle. Everything here was absorbed by the growth. The substance of the tumor was sarcomatous, firm, whitish and homogeneous. There was no fluid. As it was found impossible to reach the edge of the tumor through the single vertical incision, this was prolonged to six inches, and a cross cut was made to the right, four inches. Here, by careful dissection, the aponeurotic sheath was made out, lying over the tumor, and it was demonstrable that the foreign growth was beneath, or in the abdominal muscles. Was the peritoneum involved? Dissecting towards the right, the edge of the tumor was reached, and it was found that it could be lifted and separated from its bed. While conducting this enucleation as gently as possible with the hand, two fingers slipped, without warning, into the peritoneal cavity. The peritoneum was here and farther beneath adherent to the under surface of the tumor.

The tumor could now be demonstrated to be free from internal attachments, except to the peritoneum. What course should be pursued? The alternative was a very trying one. To leave it was almost certainly fatal. It had been so scored and disturbed that it must slough; and it communicated beneath, by a lacerated wound which it was impossible to close, with the peritoneal cavity. On the other hand, to remove it would take away a portion of the abdominal wall, muscles and peritoneum. The patient's general condition was good; breathing quiet; pulse full; no syncope or vomiting. I decided to complete the operation.

Proceeding now with excusable boldness, it was easy to remove the tumor, by free cutting and dissecting. This was at once done. On the left side, the rectus muscle was not much disturbed. On the right, it was quite destroyed. A strip of peritoneum, fully four inches wide at its widest part, and, perhaps, six inches long, tapering down at its extremities, was removed with the tumor. The abdominal cavity was now largely uncovered. The colon and stomach, as well as the small intestines, were visible. As quickly as possible, two large, warm sponges were put in the site of the tumor, and the hernial protrusions repressed. Warmth was applied to the chest, and a brandy enema given. The patient vomited, but soon rallied. A considerable time was consumed in securing vessels all around the incision, of which a great number had to be tied, including the epigastric artery. The cavity of the abdomen was sponged free of clots, and long, deep, silk sutures were passed. It was impossible to bring the peritoneal edges within two inches of each other in the centre of the wound. The ligature-ends were all brought outside, and a separate set of sutures closed, without tension, the three flaps of skin, which had been dissected off the deeper parts of the tumor, where it was not incorporated with the skin. Broad, adhesive strips were firmly applied; then cotton wadding and a binder. The patient was immediately lifted into a warmed bed, between blankets, without sheets, and as soon as she roused and complained, she received one-fourth of a grain of morphia subcutaneously. Her pulse was excellent. She was now left in charge of Dr. Temple, of Charlemont, whose subsequent history of the case is subjoined.*

The pulse, from 130, ran down to 104, the first week. The bowels were tense and tympanitic for two days, when they began to subside, and at the end of a fortnight had diminished four inches in girth. From the third to the seventh day, a dark, thin, offensive discharge came in quantities from the wound. Bromo-chloralum was used as an antiseptic. Most of the stitches were taken out the fifth day; and by fourteen days, all the ligatures had come away, but two. The sound of gas in the intestines was very distinct over the wound. The two other ligatures came away, one the thirty-second day, and the last not until fourteen weeks after the operation. The urine was drawn for ten days. The bowels moved after two weeks. The patient was able to take nourishment from the beginning; and her hope and courage were marked, as they were before the operation. She also suffered very little pain. A subcutaneous injection of morphia was given every six to eight hours, for twelve days; for the next six days, twice a day.

Menstruation came on seven weeks after the operation. The patient lay upon her back four weeks. She sat up at the end of six weeks. She walked the tenth week.

Sept. 2d.—She sent for an abdominal supporter, which was applied, and she rode about, over rough roads, after twelve weeks.

January, 1874.—Six months after the operation, she looks well, rides about, and does some house-work.

On leaving the patient, the afternoon of the operation, I expressed the opinion that, if she should live, her salvation would be due to the removal of stitches and of tension, when it occurred; and to a free vent for the discharges from the pent-up fluids in the peritoneal cavity, with disinfectants and cleanliness. Nature, it proved, relieved her by a copious discharge from the wound, coming on the third day, and lasting profusely until the seventh day.

In her favor were previous health, youth, fortitude, hope, and superb hygienic surroundings, in a mountainous region, in the full glory of summer.

Against her were the shock of a large uncovering of the abdominal cavity; the loss of a broad strip of peritoneum; the closing in of the peritoneal cavity with the raw surface of the dissected skin; the presence of a multitude of ligatures; the chance of hæmorrhage, and the necessity of suppuration.

CYSTICERCI IN THE BRAIN.—At the autopsy of a man, aged 38, three hydatids, each the size of a pea, were found imbedded in the cortical substance of the cerebrum. Although the presence of these parasites in the brain usually gives rise to severe mental disturbance, in the present instance no symptoms of disease of the brain had ever been manifested.—*Centralblatt für die Medicinischen Wissenschaften*, December 13, 1873.

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* The tumor proved to be a spindle-celled sarcoma.

Progress in Medicine.

REPORT ON OBSTETRICS AND DISEASES OF WOMEN.*

By JAMES R. CHADWICK, M.D.

OBSTETRICS.

Des Indications de l'Hydrate de Chloral dans l'Accouchement. Par le Dr. A. PELLISIER. Paris. 1873.

The author concludes, from his experiments and from the facts he adduces, that chloral hydrate, in the first place, exerts no prejudicial effect upon the health of the mother or child, and, secondly, that it produces sleep and a diminution of the pain without interfering with the regular uterine contractions. It appears to be particularly useful for the purpose of allaying the excitement caused by the pain in nervous, irritable women, who are dreading the pangs of childbirth. Its action is not to remove all perception of the pains, but merely to deaden, in a measure, the sense of feeling. The woman remains conscious that she is having a uterine contraction, but is not distracted by the intensity of her suffering; she is consequently ready to aid it by means of the abdominal muscles. Dr. Lambert, of the Edinburgh Lying-in Hospital, goes so far as to assert that the energy of the uterus is absolutely augmented by chloral, so that the contractions become less frequent, shorter and more powerful.

Sudden Death from Syncope soon after Labor.—Dr. J. J. Philips (*Guy's Hospital Reports*, xviii. 3) takes up the subject of cardiac syncope, passing by the sudden deaths in childbed that are due to embolism, the entrance of air into the veins, shock from uterine lesion and hæmorrhage. The patients generally have a natural labor, but, a short time after delivery, are seized with a faintness, subsequent to some slight effort, such as rising in bed; from this they never recover. The women in whom it occurs are commonly multiparæ, pale, in poor health, and with a history of some antecedent shortness of breath. The microscope has always shown well-marked fatty degeneration of the muscular tissue of the heart. This change can only be regarded, however, as an exaggeration of the physical processes which naturally take place in the body. Sudden death after delivery differs in a measure from that occurring during labor, though both may be attributable to weakness of the heart. In the latter category of cases, the right side of the heart is presumed to be choked by the accumulation of blood in it, owing to the difficulty of its transmission through the lungs during a labor pain, while the heart is embarrassed by the act of straining—hence failure of the heart. So, in valvular disease, death may supervene in the middle of labor, when the volume of blood is augmented by its expulsion from the uterus during contractions, and thus the heart become overburdened. Dr. Thompson believes that, in cases where the circulation is weak, ergot must be prescribed with the greatest circumspection, on account of its depressing influence on the heart. Dr. Philips, in conclusion, cites four cases of fatal and two of non-fatal syncope, which have come under his observation. Ergot was administered to two of these patients. Such cases indicate the necessity of insisting upon a strict maintenance of the recumbent posture for some time after delivery, and the application of an abdominal binder, to compensate, in a measure, for the sudden removal of pressure to which the viscera and large vessels have been subject for a number of weeks.

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* The Editors would express their thanks to Dr. Chadwick for having undertaken, at short notice, the report which Dr. Richardson, the regular reporter, was prevented by illness from writing.

Transfusion.—This means of reviving exsanguinated patients has been brought into notice in England by a successful case, which was reported to the Obstetrical Society of London by Dr. J. H. Aveling. It is to obstetricians that this subject is of chief interest and importance, for, although it is available in every form of dangerous bleeding, yet it will unquestionably be resorted to in uterine hæmorrhage more than in any other emergency. Its employment, in cases where the quality of the blood is altered, is still of dubious utility. The immediate effect of injecting blood into the veins is varied; in some instances, "patients have started up, as if from a long sleep, moved their limbs, and even asked for food; others, even of those who have eventually recovered, have only slowly shown signs of returning life. In general, the pulse soon becomes stronger, the respiration more regular, and the skin warmer. If the favorable symptoms are not maintained, the operation should be repeated, because their appearance shows that the system is capable of responding to the means employed."—(Dr. H. M. Madge, in *British Medical Journal*, Jan. 10, 1874.)

The principal forms of transfusion are four:—

1. Transfusion with defibrinated blood.
2. Mediate transfusion with pure blood.
3. Immediate transfusion from vein to vein.
4. Immediate transfusion from artery to vein.

1. Transfusion with defibrinated blood has thus far been the method most in vogue, its chief advocate being Dr. Robert McDonnell, of Dublin. He regards defibrination as an essential condition, because of the rapid coagulation of pure blood and the consequent liability to the formation of small emboli, to which he attributes all the deaths that have occurred a few days after the operation. Fibrine is also, according to some of the recent, though not universally accepted, views of physiologists, an excrementitious element, as shown by its "absence from the blood which has passed through the great depurating organs of the body."—(*Obstetrical Journal of Great Britain*, i. 8.) The oxygen contained in the red corpuscles is the true revivifying agent, and defibrinated blood, consequently, has the elements necessary for temporary stimulus. It is, therefore, physiologically better and surgically safer than pure blood. Dr. McDonnell has operated in several cases, of which three or four have been successful. His procedure is to catch the blood in a basin, whip it with a stick, or better still on the grounds of cleanliness, with a glass rod. In two or three minutes, the fibrine is found adhering to the rod, when the blood must be strained several times through fine linen. It is then ready for use, and is placed in a glass cylinder, capable of holding six ounces, shaped like a syringe, but devoid of a piston; to the nozzle is affixed a long rubber tube, with a canula at its extremity for insertion in the vein. The blood is driven into the vein by gravitation, aided by a small propelling bulb in the middle of the tube, and the occasional

gentle blowing of the operator, with his mouth applied to the open top of the cylinder. The apparatus is spoken of as comprising every possible requirement in a small compass.

2. Mediate transfusion with pure blood has been performed by Mr. Higginson, of Liverpool, in fifteen cases, of which ten were successful. His instrument resembles a syringe, but is bulky, owing to the precautions taken to keep the blood and the instrument warm, and to prevent the entrance of air into the vein. These contrivances would seem superfluous, in view of the recent discovery that heat promotes coagulation, and cold retards it. The entrance of air into the veins is, moreover, not now regarded with the same apprehension as of old, for Oré has shown that, although a large quantity of air, forced into the femoral vein of a dog, will cause death in a few minutes, a small quantity may be introduced with impunity (*Etudes sur la Transfusion du Sang*. Paris, 1868).

3. Immediate transfusion from vein to vein has been revived and perfected by Dr. Aveling (*Obstetrical Journal of Great Britain* i. 5 and 6), whose instrument, as he very justly remarks, forms an anastomosis between the circulatory systems of the two individuals (they become Siamese twins for the time being). It consists of a rubber tube, about a foot long, with a bulb at the centre. Two canulæ are inserted into one of the larger brachial veins of the patient and of the blood-donor respectively—the former being directed toward the heart to discharge the blood, and the latter toward the periphery so as to receive it. There are no valves to the central pump, for fear they might become centres for the formation of fibrinous clots; as a substitute for them, the finger and thumb of the left hand are made to compress the tube on one or the other side of the bulb, according as the bulb is expected to forward its contents toward the patient, or to refill itself from the veins of the donor. Before being affixed to the canula, the tube is filled with warm water, so that the first syringe-full injected is pure water; this has not proved deleterious. This process is repeated as often as is thought desirable, the amount of blood transfused being gauged by the number of times the pump is emptied, its capacity being two drachms. This procedure of Dr. Aveling's has been seven times successfully applied in England, and it certainly offers more advantages than any of the others. These advantages are thus stated by the author :—

a. The exact quantity of blood required is taken from the donor, and no more.

b. No delay is caused by previous complicated manipulations of the blood, it being allowed to pass from vein to vein physiologically unchanged.

c. The chances of coagulation are small, because the blood is removed from the action of the living vessel for only a few seconds, and glides smoothly through the India-rubber tube, without being exposed to the air.

d. The apparatus is effective, simple, portable, inexpensive, and not likely to get out of order.

e. The operation is safe, uninterrupted, and a close imitation of nature.

4. Immediate transfusion from artery to vein is the oldest form, and was not, at the outset, very difficult, as the early operations were

confined to animals. The direct transfusion of a lamb's blood into veins of human beings is illustrated by cases reported by Dr. Oscar Hasse, in the *Allgemeine Wiener Medicinische Zeitung* for December, 1873 (*London Medical Record*, Dec. 31, 1873), where the patients were suffering from phthisis, chlorosis, dysentery, &c., all of whom received benefit. The blood of the lamb is preferable to that of other animals, because its corpuscles most nearly resemble in size those of man. No one has yet been bold enough to recommend, or practise, the opening of an important human artery for the purpose of arterial transfusion.

The *modus operandi* of transfusion is not understood, though there is a belief, generally prevalent, that the blood injected goes directly to the heart, which is aroused to increased action by the presence of its natural stimulus. Hüter, however, seems to have satisfactorily demonstrated that the blood does not go directly to the heart, but is diffused in the general venous system. The whole subject needs investigation, and, if its employment continues to yield as good results as it promises to do, experimenters will be amply repaid for all the time and labor which they may bestow upon it.

Action of Ergot on the Bladder.—Dr. Wernich (*Centralblatt für die Medicinischen Wissenschaften*) expresses the opinion that the fulness of the bladder, after the administration of this drug, is due, not only to retention of the normal amount of urine, owing to the irritant action exerted upon the sphincter vesicæ by the preparations of ergot, but also to an increase in the amount of that fluid secreted. The practical bearing of this view is, that the bladder must be repeatedly emptied after ergot has been given, whether during or subsequent to labor.

Injection of Perchloride of Iron in Post-partum Hæmorrhage.—On February 5, 1873, Dr. H. Smith (*Obstetrical Journal of Great Britain*, i., 1) reported a case to the Obstetrical Society of London, in which he had resorted to this treatment to check a persistent secondary hæmorrhage. He began with a solution of one part of liquor ferri perchloridi fortior to eight parts of water, and increased the strength on the following days, until the twenty-first, when he injected two drachms of the pure liquor. This arrested the bleeding, but gave rise to immediate acute pain. On the twenty-fifth day, the patient was delirious, and had a brown, offensive discharge ; on the twenty-eighth day, she died. At the autopsy, the source of the hæmorrhage was found to be an artery, which hung out more than an eighth of an inch from the uterine wall, near a small mass of placenta. The author's deductions are :—

1. That post-partum hæmorrhage, after complete contraction of the uterus, and, therefore, after the uterine sinuses have been emptied of blood, is arterial.

2. That when a solution of the perchloride of iron is injected into the uterus, the sinuses take it up and carry it into the veins, the surrounding tissues becoming stained.

3. That the perchloride of iron does not produce contraction, nor, by coagulation of blood, blocking of the orifices of the uterine arteries.

4. That the application of this styptic to the cavity of the puerperal uterus is not innocuous.

At a subsequent meeting, Dr. Snow Beck, who had never used such injections, but knew of some fatal cases in the practice of his friends, labored to show that, owing to the comparative isolation of the uterus from the general system, remedies, applied to induce contraction of the gravid uterus, do not act through the medium of the cerebro-spinal nervous system (reflex action), but that ice, kneading the organ, &c., are almost entirely local stimulants of the uterine tissues; that the arrest of uterine hæmorrhage does not in any way depend upon the formation of coagula in the canals of the bloodvessels, and that, in consequence of these facts, the injection of perchloride of iron is not only utterly futile, but also dangerous, from its liability to cause septicæmia and death. To these *à priori* arguments, Dr. Barnes replied by denying the truth of Dr. Beck's facts; he asserted that the injection of iron into the uterus did unmistakably evoke reflex action, and that it also coagulated the blood, and corrugated the internal surface of the uterus, by all of which methods the flow of blood is checked. He based his views upon practical experience at the bed-side, where he had often arrested post-partum hæmorrhage by iron injections, when every other means had failed. Many successful and a few fatal cases were reported by a number of the gentlemen present. Dr. Smith closed the discussion by stating that the lesson he had tried to deduce was that, though the intra-uterine injection of iron might be a suitable remedy in cases of primary hæmorrhage, it was not so in secondary.

In the next number of the same journal (vol. i., No. 2), Dr. Playfair gives a very interesting account of a case, in which he considers that, although the patient had septicæmia and barely escaped with her life, she would certainly have died during labor, if he had not employed this styptic. He emphasizes the importance of washing out the hardened coagula caused by the iron, before they decompose and are absorbed.

Dr. A. B. Steele (*Ibid.* i. 3) testifies to the happy action of these injections in some of his patients. He is disposed to think that the iron does not act as a direct styptic, but, rather, as a "reflex-excitor of the incident nerves of the walls of the uterus." He puts the question very strongly, whether we shall allow the patient to bleed to death before our eyes, rather than employ means that will certainly save her, but may subject her to a possible future risk. He lays stress upon the importance of removing all coagula or retained portions of the placenta, before injecting the fluid.

Dr. T. E. Williams claims (*Ibid.* i. 9) to have had seven cases, in which he is satisfied that the use of perchloride of iron was the means of saving life. In one of these, the arrest of the hæmorrhage was clearly attributable to the uterine contractions, excited by the injection, while in another it was quite as evidently due to the hæmostatic and styptic properties of the iron, for the uterus remained soft and relaxed, though the bleeding ceased.

As the matter now stands, the injection of a strong solution of liquor ferri perchloridi fortior into the uterine cavity seems to be not only justifiable in primary post-partum hæmorrhage, but to be, in reality, the only means we possess of checking the flow where ergot, kneading the uterus externally, and the introduction of cold water, ice, or the operator's hand into the uterine cavity, prove ineffectual.

[To be concluded.]

Translation.

ON THE NECESSARY ALTERNATION IN THE INTENSITY OF DISEASES AND IN THE VALUE OF PREVENTIVE MEANS, SUCH AS VACCINATION.*

THE diminution of the efficacy of vaccination as a preventive of smallpox has been a subject at first of disbelief and then of astonishment with the medical world, and even with the whole public. The causes have been sought in the nature of the vaccine, but it has not yet been proved that taking the matter for inoculation anew from the bovine species has restored the primitive protecting power.

Without wishing to deny to the profession the possibility of discovering an explanation drawn from their own province, that of medical and physiological facts, I wish to point out a consequence of the fundamental law of *heredity* as applicable to the phenomenon in question. The better to understand its force, it is well to call to mind a fact with regard to epidemics.

Medical history shows, in the case of epidemic or contagious diseases, a considerable mortality during the first periods of their appearance, followed by a diminution which goes on slowly from generation to generation. In our day, the epidemics of cholera morbus have diminished in frequency and intensity within a short period. Previously, syphilis and smallpox, two infections of different natures, both in themselves and in their modes of transmission, had offered the same phenomena, to wit, extreme intensity at the outset, diminution from age to age.

If this course belongs to the nature of diseases, populations infected for the first time in the nineteenth century would be less decimated than those infected in previous centuries. But it is not so. When a savage population has recently for the first time encountered smallpox, it has suffered as severely as Europeans did when the disease first appeared in Europe. It is the fact of the invasion of a new territory that renders epidemics destructive, and a little reflection will easily show why.

When an epidemic falls upon a people for the first time, most of the persons disposed to receive its effects are attacked. It destroys a large number. The subsequent births are from persons who have not been attacked, or at least have survived; that is to say, from persons better fitted than the others to resist the disease in question. In virtue of the ordinary resemblance of children to parents, the new generation will be less disposed to suffer from the disease. We shall have, then, a diminution or a momentary disappearance; probably, I presume, a diminution, because the resemblance of children to their ancestors [what is called atavism] is not very rare, and tends to revive certain forms or certain physiological dispositions in families. After two or three generations, this special cause of the return of the disease shows itself but slightly, the resemblance to a great-grandfather or a great-

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* A chapter from a French work recently published, entitled: Histoire des Sciences et des Savants depuis deux Siécles, suivie d'autres études sur des Sujets scientifiques, en particulier sur la Sélection dans l'espèce humaine. Par Alphonse De Candolle. Genève. 1873.

great-grandfather being more rare than to a grandfather; but by this time the whole population will not have been exposed by itself, or through its fathers, to the disease in question, or it will have been exposed very slightly. Thus arises anew, by the very rarity of the affection, a proportion of individuals who have not been submitted to proof, or whose parents have not been submitted, individuals among whom the disease will rage and the selection again begin to operate.

The force of things brings about, then, a variation in the intensity of each disease, unless it be an affection which rarely kills, or which falls principally upon the aged. The more a disease decimates the young, the more rapid is the process of selection, and the more promptly is a diminution brought about. If a first invasion destroys, for example, half the population below the marriageable age, the survivors ought, in their physical or physiological conditions, to be very little favorable to the invading disease, and their children will profit by the immunity. If the disease is less fatal, the weeding out will be less.

Hence, we see, I do not say the cause, but a cause, why many of the pests and other very grave affections strike populations at intervals, and are, as we say, epidemic, while certain less grave diseases, even among those which attack the young, prevail from year to year more continuously.

Such are the clear laws, we may add necessary laws, which govern the aggravation or diminution of diseases, independently of all other natural circumstances. Doubtless, there may be other physical or physiological causes, and physicians may discover preventive or curative means which may have an influence, but the incessant effects of heredity and selection none the less exist, and when other influences are not shown to be present, we may be sure these play their part.

We see, now, why the efficacy of preventive measures, such as vaccination, must also vary.

When Jenner discovered vaccine, smallpox had lost, in Europe, something of its primitive intensity. The populations there existing were descendants, for several generations, of those who, in consequence of selection, were able tolerably well to resist an epidemic. This indicates that these individuals were not as readily attacked as at first, or that the attacks were less fatal, or, again, if they did not die, rarely contracted the disease a second time. It was admitted that inoculated persons were protected from a second attack; the dangerous practice of inoculation would not have been continued were it not for this opinion. Vaccination, then, was introduced at a time when the European population was in an ameliorated condition with regard to smallpox epidemics. Practised with zeal, it rendered smallpox very rare. But precisely because it had become rare in the generation which followed Jenner, we find that a majority of this generation is of persons who have never been exposed to the epidemic, and among this number are those who naturally, or from atavism, are disposed to receive the variolous infection. Hence a certain recrudescence which vaccination does not easily control.

In other words, after two or three vaccinated generations, the European population, having been slightly exposed to smallpox, approaches the conditions of a population which smallpox invades for the first time. The shock is not so severe, but it is sensible. All the means of resisting it which have sufficed for fifty years may now become less efficacious.

We may conclude, generally, that heredity and selection ought to produce an alternation of intensity in diseases. The alternation should be the more marked as the disease in question is more fatal, and more particularly attacks the young. Finally, the preventive or curative measures which may have sufficed in the periods of diminution must lose a portion of their efficacy in the period of aggravation, particularly as regards vaccination in its relations to smallpox.

The works of Darwin being now generally known among physicians, it is probable that many of them have thought of the effect of selection on variation in the severity of diseases. I doubt, however, if they have paid attention to its consequences relative to vaccination. Hence, I have been induced to make this, perhaps new, application of the ideas of the celebrated English naturalist.

Bibliographical Notices.

The West Riding Lunatic Asylum Medical Reports. Edited by J. Crichton Browne, M.D., F.R.S.E. Vol. iii. London: Smith, Elder & Co. 1873. Pp. vi., 349.

The present volume of Reports is larger than either of the preceding, and contains several valuable papers, deserving of special notice. In the preface, the hope is expressed that the volume will be received as a proof that the medical officers are earnestly endeavoring to avail themselves of the vast opportunities which the Asylum affords to give breadth and precision to our knowledge of mental diseases. Certainly, if future reports show the same amount of well-directed work which this one presents, the profession will have cause to rejoice that such excellent use is made of the materials. We hope that similar institutions in this country will enter upon the same course, and that the material for the study of mental and nervous diseases which is now lost will be utilized.

I. The first paper is on *the Convolutions of the Human Brain considered in relation to the Intelligence.* By William Turner, M.B. The author considers the mass and weight, the external configuration, internal structure and vascular supply of the brain. He finds that the size and weight of the brain do not give an exact method of estimating intellectual power, that the configuration of the convolutions is not of itself a guide. He thinks the internal structure is more to be relied upon, not merely the size of the cells and their relative numbers, but, also, and perhaps still more, the internal association of the different convolutions one with another by commissural fibres.

II. *Experimental Researches in Cerebral Physiology and Pathology.* By David Ferrier, M.D. This is the full account of the author's experiments, a brief abstract of the conclusions resulting therefrom having been published in the *British Medical Journal.* The more important points have been already noticed (see Journal, July 24, 1873, p. 80).

III. *Observations on the Histology of the Brain in the Insane.* By Herbert C. Major, M.B. Several cases are detailed with the microscopic appearances found in the brain. Changes were found in both vessels and cells in chronic brain wasting, senile atrophy and general paralysis. In every case, he found important morbid changes, but was not able to point to any which, by their presence or absence, will, in the three forms of disease considered, mark infallibly the nature of the affection. He looks forward with confidence to a time when this can be done.

IV. *The Heart-sounds in general Paralysis of the Insane.* By J. Milner Fothergill, M.D. Distinct accentuation of the aortic second sound was noted in forty-four out of fifty-five patients affected with this form of insanity. By accentuation, he means "such an increase in the sound as made it at once audible, and distinctly so, over the right costo-sternal articulation." All doubtful cases were rejected. No distinct hypertrophy of the heart was found, no valvular disease seemed likely to be present. It seemed, then, that the accentuation must be due to increased vascular area. This is found only in the cerebro-spinal system; hence the aortic valves are closed by a larger and, therefore, heavier column of blood *above* them. Examining, then, five cases of sub-acute mania, it was found that the second sound was loud and full when upright, less so when lying down; the sound was harder than in general paralysis. Several cases of general paralysis were then reëxamined to detect the effect of position. In five out of nine, the sound was affected by posture. In six new cases, the second sound was affected in four. His conclusions are:—1. That in general paralysis and in other conditions of cerebral hyperæmia, the heart's aortic second sound is usually accentuated. 2. That there is evidence pointing to the conclusion that this cerebral hyperæmia is connected with the peri-vascular lymph spaces. 3. That a species of antagonism would appear to exist between heart disease and insane conditions, associated with hyperæmia, and manifesting mental exaltation.

V. *On the power of perceiving Colors possessed by the Insane.* By T. W. McDowall, M.D. After a general review of color-blindness, the author's investigations are recounted. About one hundred and twenty skeins of worsted were spread on a white tablecloth, and the patient was asked to pick out a skein or two to match one held in the hand. The slight degrees of color-blindness were not noted. Of four hundred and thirty-eight women, suffering from epilepsy, general paralysis, dementia, cerebral atrophy, chronic mania, mania, recurrent mania, melancholia, monomania, acute mania, &c., the answers of 114 were rejected on account of the mental condition, either dementia or excitement being so great that their color-blindness might, it was thought, be thereby accounted for. Of the 324 remaining, 9 were evidently more or less color-blind; 302 men were examined; 82 refused to answer or were too demented or excited for their answers to be received; 13 were more or less color-blind.

VI. *Nitrite of Amyl in Epilepsy.* By J. Crichton Browne, M.D. A striking contrast was found between the susceptibility of general paralytic and epileptic patients, in regard to susceptibility to the action of the nitrite of amyl, the latter being much more strongly affected. By causing epileptics, who had daily attacks, to inhale the drug about the time the attack was expected, it was found that the fit was averted. Good results were also obtained in the status epilepticus, eight patients out of ten recovering after the nitrite was used. This brief summary is far from doing justice to the paper. Cases are reported in full, with the result of the administration of the nitrite, both by day and by night; also cases in which it was withheld where it had, at first, seemed to avert the fit, and the fit came on.

VII. *Observations on the Localization of Movements in the Cerebral Hemispheres, as revealed by Cases of Convulsion, Chorea and "Aphasia."* By J. Hughlings Jackson, M.D. This paper contains a recapitulation of the author's views in regard to convulsions in their pathological and physiological relations, and a plea for the study of such cases, not as instances of certain so-called diseases, but from such a standpoint as to discover the relation between one-sided paralysis and one-sided convulsion, between these and different defects of speech.

VIII. *On Electro-excitability in Mental and Nervous Diseases.* By John Lowe, M.B. The experiments described in this paper were undertaken in hopes of elucidating the diagnosis between various forms of mental and nervous disease in their earlier stages, and in cases of an obscure character. After describing the machines used and precautions taken to obtain accurate results, tables are given, showing the electro-excitability of muscles in sane men and in certain cases of insanity. In cases of general paralysis, chronic disorganization of the brain and locomotor ataxy, in which the power of locomotion was affected to such an extent as to prevent the patient walking without assistance, the electro-contractility of the muscles of the legs was impaired or altogether gone. The muscles of the face and arms, in these cases, responded readily to the electric stimulus. In progressive, muscular atrophy, the electro-muscular contractility was diminished according to the extent of the disease.

IX.—*Heart Disease and Insanity.* By J. Wilkie Burman, M.D. The object is to discover whether such statistics as can be employed show any general causal relation between heart disease and insanity. For this purpose, he inquires whether the two diseases are increasing in frequency *pari passu*, and concludes that heart disease is increasing rather more rapidly than insanity. Next, he inquires as to whether those parts of England and Wales in which there is a larger proportion of cases of heart disease, yield a larger proportion of insane people, and finds a very striking and remarkable relation between the two diseases. The third point investigated is as to whether heart disease is more frequent in asylums than out of them. He finds that, as a cause of death, heart disease acts with about equal frequency in the sane and insane. Leaving, then, the comparison of the sane and insane, the author considers the latter class only, and records the results of post-mortem examinations. Of 500 cases examined, in 241 the heart was above the average healthy standard. In 105, there was valvular disease; in 31, aortic; in 14, excess of external fat; in 10, pericardial disease; in 9, coëxisting disease of kidney or lungs; in 72, no heart, aortic, or other than cerebral disease. In 44 cases, where the heart was not above the average weight, there was valvular or aortic disease. Among the living insane, of 450 women, 91, or 20 per cent., showed signs of heart disease; of 680 men, 156, or 23 per cent., showed signs of heart disease. In 144, or 21 per cent., there was hypertrophy without murmurs. In general paralysis, the replacing murmur was basal diastolic in 4 out of 6 cases. This is interesting as compared with the statements made by Dr. Fothergill. The forms of insanity with which heart disease is most commonly associated are hypochondriacal melancholia, that particular form of chronic mania termed monomania of suspicion, and such modified forms of general insanity as those in which the patients are sullen and morose, or impulsive.

X. *Notes on the condition of the Tympanic Membrane in the Insane.* Part I. By John C. Galton, M.A. Our notice is becoming so extended that we will only give his third conclusion. "Many more comparative observations upon the sane and the insane, and further experiments as to the action of drugs . . . . . before that such conclusions will have much value."

XI. *On the obscurer Neuroses of Syphilis.* By T. Clifford Allbutt, M.D. Intellectual and emotional disorders, sleeplessness, motor defects, as tremor and muscular debility, neuralgia and nutritive defects are considered. Several interesting cases are reported.

XII. *The Weight of the Brain in the Insane.* By W. Crochley S. Clapham, Esq., L.R.C.P. This paper is so completely statistical, drawn up from the examination of 716 cases, that an abstract, or even conclusions from it, would be unsatisfactory. The average weight of the whole brain was 46.285 ounces; males, 48.149 ounces; females, 43.872 ounces.

XIII. *The Change of Life and Insanity.* By Henry Sutherland, M.D. Change of life is not usually the cause of insanity; the age of attack is about 45 years, and this occurs at an interval of one year from the menopause; married life does not predispose, nor the number of children; melancholia is the more common form, more rarely, mania. A certain group of symptoms are diagnostic, and the prognosis is favorable; the duration is usually more than three months, and less than three years.

XIV. *On the Anatomical, Physiological and Pathological Investigation of Epilepsies.* By J. Hughlings Jackson, M.D. This paper is rather rambling, and without sufficient logical sequence to be easily summed up. The mode of onset of epilepsy is considered, beginning in the hand, the face or tongue, or both, or in the foot. Each of the three varieties is supposed to depend on the discharge of gray matter, those being in the hand on the discharge of a part of the cerebrum where the hand is largely represented in movements, &c.

Epilepsy is defined as "*the name for occasional, sudden, excessive, rapid and local discharges of gray matter*" (Italics are the author's). "The following are epilepsies:—(1) A sudden and temporary stench in the nose, with transient unconsciousness. (2) A sudden and temporary development of blue vision. (3) Spasm of the right side of the face, and stoppage of speech. (4) Tickling of the index finger and thumb, followed by spasm of the hand and forearm. (5) A convulsion almost instantly universal with immediate loss of consciousness. (6) Certain vertiginous attacks." He, very properly, we think, looks upon loss of consciousness as merely one of the phenomena of epilepsy, often, indeed, present, but by no means necessary.

We have given, perhaps, too long a summary of the papers in this report. It will be seen that nearly all are simply a collection of facts, with a few simple conclusions drawn therefrom. The good use to which the material has been put is one of the most marked features. When will any of our institutions be able to show such an array of post-mortem examinations and careful investigations?

S. G. W.

Boston Medical and Surgical Journal.

BOSTON: THURSDAY, FEBRUARY 19, 1874.

WE called attention last week to the fact that an indecent exhibition got up to excite prurient imaginations was prevented by the executive officer of this city several months ago. For this he deserved and received the thanks of the decent part of the community. We notice that one of our daily newspapers, to whose title the adjective *respectable* has hitherto been prefixed, has been represented at a "private opening" and admires the unremitting work of nine months upon the new "Museum of Anatomy!" *O tempora, O mores!*

THE subject of cremation is at the present time occupying considerable attention in some parts of Europe, and as a matter of sanitary importance it is likely to obtain more thoughtful consideration than it has hitherto received. Christian nations have become so accustomed, from both precedent and precept, to inhumation as the only desirable method for the disposition of their dead, that the mere suggestion of any other mode is to most persons repulsive and shocking. Yet the process of cremation of a dead body, on the one hand, and of its gradual decay after inhumation, on the other, are in reality similar, except in the element of rapidity; and the results of either process are, in their chemical composition, identical.

The slowness of decomposition after inhumation, and the crowding of certain localities with bodies, may exert an influence deleterious to the health of the living. Both air and water may be so charged with the products of the decay of corpses as to become unfit for the support of animated life, and it has been asserted in the case of two Italian villages, whose cemeteries were, to all outward appearances, favorably situated as regarded the health of the people. that a frightful epidemic prevailed because the springs, from which their drinking water was obtained, were supplied by the rain-water which fell on the cemeteries, and became charged with the organic products of the decomposition of human remains.

For several years past, a number of Italian physicians have been engaged in experiments regarding cremation, convinced that the only way to escape the evil results of inhumation is to adopt the process of burning the dead. Drs. Polli, Brunetti, Gorini and Pini have devoted much attention to the details of cremation, and the last named physician assisted at the funeral rite of an Indian prince, whose body was burned on the banks of the Arno. Although the process was similar in its details and result to such as are constantly witnessed in

India, yet the procedure was too slow, and the expense of the precious woods, resins and oleaginous substances too great to permit of their general adoption by western nations.

Dr. Polli, by experiments upon the bodies of dogs at the gas-works of Milan, has shown the possibility of cremation of bodies in retorts by means of coal gas.

Dr. Brunetti sent to the Vienna exhibition samples of apparatus with which he had successfully practised cremation of the human body. By means of his apparatus, with 160 or 180 pounds of wood, complete cremation was accomplished in two hours or more. A body weighing 114¾ pounds was reduced to less than four pounds.

The processes of both Drs. Polli and Brunetti are, however, slow and costly. That of Dr. Gorini is not open to the former of these objections. He makes use of a substance whose composition is not known, but it is, probably, a mixture of caustic soda, with nitre or chlorate of potash, which is melted in a crucible at a very high temperature. When a portion of a human body was thrown into the liquid it was immediately enveloped in flames, and a limb was completely destroyed in the space of twenty minutes, the volatile part disappearing in the form of gas, while the solids remained as ashes at the bottom of the crucible.

The Medical International Congress, held at Florence in 1869, and also the Congress at Rome in 1871, voted that "every possible means should be employed to obtain legally, in the interest of the laws of hygiene, that the incineration of bodies should be substituted for the present system of inhumation." The Royal Institute of Science and Letters of Lombardy has offered, for 1877, a prize for the purpose of obtaining a method of cremation of dead bodies, such as may be substituted for inhumation, which shall be free from inconvenience, expeditious, economical, "and of a nature to respect civil usages and customs, and the proprieties of social life."

We are indebted for our facts regarding cremation to an interesting and extended article in the *London Medical Record* of Jan. 14, 1874.

The Hospitals.

MASSACHUSETTS GENERAL HOSPITAL.

(*Saturday, February* 7, 1874.)

Operations were performed in the following cases:—Frost-bitten Fingers, Needle in Hand, Sinus of Arm, Gun-shot Wound of Hand, Fracture of Femur, Talipes Varus, Lacerated Wound of Finger, Abscess of Hand. During the week, Abscess of Face, Railroad Injury of Leg.

Frost-bitten Fingers.—Sloughing had exposed the extensor tendons and second joints of all the fingers. Dr. Cabot amputated at the line of demarcation on both hands.

Needle in Hand.—Extracted.

Sinus of Arm—in a boy four years old. It was laid open and explored for dead bone by Dr. Cabot. None detected.

Gun-shot Wound of Hand—four weeks ago, from a pistol, penetrating the hand. The bullet was unsuccessfully searched for immediately after the accident. The opening extends across the back of the hand. A counter opening was made, and, incidentally, the bullet was again looked for, but not found.

Fracture of Femur—in a child twenty-four days old. It occurred during delivery, and the bone had united, but with considerable bowing upward. Dr. Cabot applied direct pressure at the point of fracture until the femur corresponded with the one of the opposite side. Straight splints were then applied.

Talipes Varus—in a man twenty-two years old. One year ago, the tendo Achillis and plantar fascia were both divided. Now, the patient can walk on the sole of his foot, though slight inversion and a few tight bands of plantar fascia remain. The latter were divided subcutaneously.

Lacerated Wound of Finger—in an adult, of six weeks' standing. Sloughing of the soft parts had occurred, exposing a necrosed flexor tendon and phalanges. Amputated at the metacarpo-phalangeal articulation.

Abscess of Hand—following a contusion received two months ago. The hand and fingers were thickened and stiffened by continued inflammation. Two abscesses were opened.

Abscesses of Temple—in a man twenty-two years old. Six months ago, pain commenced in the left temporo-maxillary articulation on opening the mouth. It increased, so that the patient was compelled to use liquid diet only. Three months later, an abscess formed near the angle of the jaw. It was opened, and a carious tooth, which seemed to be the cause of the trouble, was removed. During the past three months, the cheek overlying the joint has become indurated, and there has been neuralgia of the inferior dental nerve. Recently, an abscess has formed above the ear. Dr. Hodges opened this, and afterwards pulled an upper molar tooth; pus followed the extraction, and has continued to discharge into the mouth since.

Railroad Injury of Leg.—A man with a compound, comminuted fracture of both bones and extensive laceration of the soft parts. Dr. Cabot amputated just above the knee-joint by the circular method.

H. H. A. BEACH.

BOSTON CITY HOSPITAL.

THE more interesting of the surgical operations last Friday, February 13th, were as follows:—

A Scirrhous Tumor, involving the axillary glands and filling the axillary space completely, was removed by Dr. Cheever. The patient was a woman forty years old. The disease was secondary. Eighteen months ago, the breast was removed for scirrhus. Ten months ago, the consecutive disease of the glands appeared. One month ago, the tumor in the axilla was two thirds its present size and was movable; at present, it is comparatively fixed, is quite painful and appears of the size of a large orange. The cicatrix has not been affected by the disease.

The tumor was exposed by the dissection of an elongated flap from above it, the base of the flap being at the upper part of the axillary space. The dissection of the growth extended deeply and laid bare the axillary artery about an inch in extent.

The edges of the wound were apposed by sutures anteriorly; while posteriorly they were left open to allow drainage and irrigation.

Dr. Thorndike performed Re-amputation of the Thigh. The primary amputation was in consequence of a compound and comminuted fracture of the leg just below the knee, with extensive contusion and laceration of the soft tissues above the knee. Though the flaps were ample to cover the stump at the time of the operation, their bruised condition caused them to give way and slough, leaving now a conical stump, with the end of the femur protruding under the skin. The patient had been greatly reduced by his injuries and by five attacks of secondary hæmorrhage, after the amputation, but he was now in excellent condition.

The end of the bone was exposed by dissecting away the soft parts of the stump, and three inches of the femur were removed.

Dr. Cheever performed a Plastic Operation for the relief of the deformity caused by the Vicious Cicatrix of a Burn. The patient was a young man of seventeen years. The burn was received when he was four years old. At the age of nine years, the patient was operated on by the late Dr. J. Mason Warren, but the relief obtained was only temporary, in consequence of the neglect of the boy to carry out the incidental treatment. The contraction has continued progressively, until, at present, the deformity is very marked. The entire front of the chest is covered with cicatrized skin. From the upper part of the sternum, a band of cicatricial tissue, four inches in width, extends upward. This contracting band has drawn the chin down upon the breast, everting the lower lip, distorting the lower jaw and the lower incisor teeth, and pulling upon the cheek, the lower eye-lid and the lobule of the ear. At about the middle of this band, the finger can pass a considerable distance beneath it on each side, as if the cicatrix did not involve the underlying skin of the neck.

Dr. Cheever divided the cicatricial band transversely at its centre; he then found that the scar included not only the skin, but the subjacent parts quite deeply, so that when all the offending tissue had been divided and the chin set free, an exposed surface, extending from the chin to the top of the sternum, and laterally from one angle of the lower jaw to the other, was the result. To cover this denuded space, Dr. Cheever took a flap of skin from the side and back of the neck under each ear, sliding it forward and leaving the consequent raw surface posteriorly to heal by granulation. Though the flaps were liberal, there was still left in front an uncovered space three inches wide and six inches long, which it is proposed to cover by a secondary plastic operation, taking the flap from the arm of the patient. The edges of the wound were closed by silver-wire sutures.

Dr. Wadsworth performed Iridectomy in the case of an adult patient who had had an ulcer of the cornea with large cicatrix in consequence. The iris was adherent to the cornea, except at the upper segment, where the pupil was free. Dr. Wadsworth performed iridectomy upward, giving improved vision. The white cicatrix he proposed to remedy by tatooing.

A Cystic Tumor of the Breast was removed by Dr. Cheever. The disease was the result of a blow upon the breast ten years ago. The part was greatly enlarged, the skin thinned and blue, the nipple retracted. On removal, the growth was as large as the head of a child a year old. It consisted of a single cyst, containing a dark chocolate-colored fluid and some broken-down clots. At one part of the cyst internally, was a proliferated growth, of the size of an English walnut.

Other operations, not reported in detail, were as follows:—

Removal of a Fatty Tumor of the Neck, Tenotomy for Talipes Varus, Radical Cure of Hydrocele (two cases), Operation for Phimosis, Division of Fistula in Ano, and Removal of a Glandular Tumor, by Dr. Thorndike; Removal of Ingrowing Toe-nail by Dr. Cheever; and Removal of a Tumor of the Eye-lid by Dr. Wadsworth.

CARNEY HOSPITAL.

DURING the past few weeks, there have been a number of interesting operations at the hospital, as follows:—Dr. John Homans Amputated the Glans and Prepuce on account of syphilitic disease, of three years' standing. The patient had lost his uvula and part of the soft palate, and, for about seven months, had been treated at the Dispensary for an obstinate perforating ulcer behind the corona. Micturition was painful, and the stream small; he could not bear dilatation by bougies. After etherizing the patient, Dr. Homans passed a straight, metallic catheter into the urethra, and then entered the knife between this and the body of the penis. The catheter was then withdrawn, and the urethra divided about half an inch anterior to where the penis was to be amputated; this was to allow for retraction. After amputation, it was found that the ulcerating abscess had encroached upon the urethra about an inch and a half from the meatus; this accounted for the intolerance of bougies, and the difficult micturition.

Wood's operation for the radical cure of Hernia was performed by Dr. Homans on a boy two and a half years old. The hernia was indirect, and the tumor extended down between the knees. The operation was done on January 7th, and has not been successful.

A case of large burrowing abscess in the left buttock and ischio-rectal space was freely laid open, and is doing well.

On January 22, Dr. Homans removed a Tumor, the size of an English walnut, from the region in front of the inner side of the internal condyle of the left humerus in a man aged 28. As it was intimately connected with the muscles, nerves and vessels of the neighborhood, a careful dissection was required. The tumor proved to be a fibroma.

Dr. Homans also Amputated the little finger of a man, on account of a bite received in a fight. The operator remarked that there seemed to be something poisonous about the bite of a human being, and he had seen several fingers and thumbs lost in consequence.

On February 2d, Dr. Homans tied the Femoral Artery at the apex of Scarpa's triangle for Aneurism of the popliteal. An incision was made over the course of the vessel, the sartorius muscle lifted, an opening in the sheath, just large enough to admit the aneurism needle, made, and the vessel tied. All pulsation ceased at once in the tumor. A more detailed account of the case will be furnished in a later number of the JOURNAL.

Correspondence.

MEDICAL OVERSIGHT OF SCHOOLS AND SICKNESS-RATES.

MESSRS. EDITORS,—Before answering the questions of Dr. Greene, in the JOURNAL of January 22d, I would like to say that, in an article on "School Hygiene," by Dr. Frederic Winsor, of Winchester, prepared for the Fifth Annual Report of the State Board of Health, and now in press, it is recommended that the public schools be supervised by a medical man. Dr. Winsor proposes that a physician, acting under the authority of the town board of health or the school board, visit all public schools and report their sanitary condition to his employers, and that he be paid for his services. I have not Dr. Winsor's words to refer to, but his plan includes the supervision of ventilation and warming, the admission and arrangement of light, the inspection of privies, the position of the children, and similar modes of preserving health. It would also certainly allow of the exclusion from school of all children who could communicate disease to others. But beyond this point a medical officer could not go. Although, for the public safety, he might protect the children while at school, he would have no right to concern himself with their individual ailments, and when they go home the care of their health certainly devolves upon their parents and such medical advisers as they may choose. However it may be in England, and whatever the *Lancet* may think, the professional visits of a public medical officer at the patients' homes would not be tolerated with us.

I do not think we can reasonably expect to get sickness-rates through school records.

To determine whether absence from school for alleged illness is really due to that cause seems to me impracticable. To determine the kind of illness is out of the question. The opinions of teachers or school committees would have no statistical value. The prevalence of epidemics in schools might be ascertained in a general way through the reports of teachers, and this would, perhaps, be some addition to our present knowledge of these influences in towns and cities.

I can think of only one way to get "sickness-rates," and that is, by careful observation of the whole population in small towns by physicians who know the state of health of every family, and this plan would require the comparison of a large number of such towns for several years.

Very respectfully yours, GEORGE DERBY, M.D.

LETTER FROM RUSTICUS.

DOWN EAST, January 31, 1874.

I SUPPOSE, MESSRS EDITORS, from seeing that somebody alludes to my letters in his, that somebody reads them. This is very well, and leads me to write again. At the same time, I wish Mr. Somebody wouldn't say that Rusticus confesses that he is losing faith in all medical treatment; for Rusticus hasn't made any such confession, and he knows, full well, that medical treatment has great power, and will kill or cure, according to circumstances. Rusticus, it is true, thinks that a great deal of medicine is thrown away, by being put into stomachs, and that it would be as well to throw some of it away at first. He remembers, very well, the style of practice when he was a student. He used to see a physician from a neighboring town, who gave quantity, quality and variety. To leave the third person and take the first, *I* remember Dr. Short, who used to come to our place to see Mrs. Anæmia about every week, and in the afternoon, or the next day, Mr. Anæmia used to go to Dr. Short for the medicine. There were never less than from four to six bottles went with him; not vials—bottles. There was the alterative, the emmenagogue, the tonic, the carminative, the deobstruent—for he used all these words—and occasionally a cathartic, with perhaps an emetic. Well, somehow she lived, though she took one thing before and another after meals; one on rising and one on going to bed, for sometimes she got a narcotic, also.

Such medication as the above, I long ago lost confidence in. It wasn't a peculiar case, that of Mrs. Anæmia and Dr. Short. All doctors did very much the same once, and within a very few years. See how well some folks get along without medicine. Our friends say, "Such a man might have been saved, perhaps, if he had had a dose of physic." *Perhaps.* "Such a man would at any rate have suffered less." No doubt of it, and Mrs. Anæmia would have suffered less if she hadn't had any medicine at all. All that I wish to charge upon my younger brethren is, that they should draw proper inferences after their physic. The Scotch, I believe, have a verdict of "not proven," as well as "guilty and not guilty."

But, there's no use in my writing this, perhaps. I say it every day. My habit is, to say a man don't need medicine when I think so. If I think he does need it, he gets it.

How much one can learn from outsiders. At the cabinet maker's shop, in our town, when a man cuts himself, he just daubs one side of a cedar shaving with glue and winds it round his finger. Over at a neighboring shop, they use a piece of wash-leather in the same way, and I have found that simply winding a bit of tape snugly round does just as well. If you begin at the tip of the finger and wind back, it squeezes the blood back, and after a day or so, if you take off the tape, you'll often find it well healed. A pretty good jet from an artery, in a finger, you can stop in this way, and I have seen a spirt from the radial stopped entirely by raising the arm perpendicularly. Bad way to carry it, but my patients, or a good many of them, know how to do it, till the doctor comes.

Children will pick off scabs and make the blood run. You've no idea, unless you've tried it, how well you can stop a pretty large oozing by a piece of a country newspaper put over the spot. I almost always carry some filtering paper in my case; or some of the thick paper which we use for blotters. They all work well, but the last is the best, being more porous. As Mrs. Freckles says, "Cobwebs is nothing to it." But the first thing to teach your patient is, that water won't run out of a hole which you can cover with your finger, so long as you keep your finger over it. No more will blood. But if you keep pulling your finger off to see if the water will run, what then? Why, it runs. So will blood. What then? Why, keep your finger on till the doctor gets there. Yours truly, RUSTICUS.

TANNATE OF QUINIA.

MESSRS. EDITORS,—In reply to your correspondent "Inquirer," I think there is good ground for stating that the tannate of quinia is comparatively tasteless, because comparatively insoluble, but that it is not absolutely so. In Kerner's experiments *(Archiv für die Gesammte Physiologie*, iii.), he found that while muriate of quinia, injected subcutaneously, made its appearance in the urine in fifteen minutes, and the sulphate rubbed with sugar and given by the mouth in forty-five, the tannate appeared only after three hours, and then in small quantity. The kinovate of quinia, which is probably the salt actually existing in the bark, was as slowly, but rather more completely, absorbed, while the alkaloid in kinovate of quinidia and in the powdered royal cinchona bark did not appear until even later. It would be fair to deduce from this the rule that if quinia is given either for its local action in the stomach, or in order that it may be absorbed rapidly, or in large quantity, the tannate is a highly ineligible form of administration. It is true of quinia, as of many other substances, that comparative insolubility or "incompatibility" out of the body does not prove inertness in the intestinal canal. Where, however, the amount of the drug to be present in the blood at a given time is of consequence, as in the present case, the form of administration should be carefully considered.

Whether the tannic acid of coffee differs in its action upon quinia from the officinal drug, I do not know. E.

LINE OF DULNESS IN PLEURITIC EFFUSION.

LAWRENCE, January 23, 1874.

MESSRS. EDITORS,—I was greatly interested in the remarks of Dr. Ellis on the line of dulness in pleuritic effusion, reported in your JOURNAL of January 1, 1874. I have, in quite a number of cases, noticed resonance and the respiratory murmur much lower down the back than at the sides, but had never observed the curve. Since reading the remarks of Dr. Ellis, I have made some experiments with the lungs of animals in vessels of water, and, I think, I am able to explain the "curved line of dulness."

If partially inflated lungs be carefully let down into a vessel of water, with the trachea held perpendicularly to the surface of the fluid, and efforts be made to immerse them therein, it will be seen that the greater weight of water to an equal bulk of the lungs (3 to 1) will cause the lobes to float out laterally, while their thin borders will be turned upward. If now, the lungs be lowered into a partially filled jar of water which has a capacity to receive them without depriving them of their latent air, so to speak, it will be seen, as they are gradually sunk, that the thin lateral and anterior edges of the lobes are rolled *inward* upon the concave surface of the lungs.

Now the lateral and anterior borders of the lobes of the lungs are much thinner than the posterior parts of the same. Moreover, the air-cells of the thin borders are larger than those in the interior of the lobes, the intervening septa are less abundant, and, consequently, the lung tissue is lighter and more flexible at its edges than elsewhere, and not only floats more readily, as shown above, but collapses from less pressure than the parts having smaller cells, thicker and more abundant septa, firmer bronchioles, and lobular bronchial tubes.

As an inevitable result, therefore, we should infer that any fluid effusion in the chest, unrestrained by adhesions, would assert its power first over those parts of the lung which are weakest, and we should expect to detect its presence in those regions where the lung tissue must yield first, viz., at the sides.

My experiments further show that the thin edges of the confined lung tend to roll *inward* as the increasing fluid advances on them, so that we may say, in general terms, that the fluid tends to mould the lungs into a globular form, as the uterus first moulds the child before it can expel it. When the lung is so far moulded that it presents a force equally resisting in every direction to the advancing fluid, the latter will then assume a hydrostatic level, as it has no encouragement to drift in one direction or the other, and percussion will announce a *horizontal line of dulness.*

If the effusion could recur in one day and recede upon the following day, we should expect the same phenomena to be accurately repeated in the inverse order; as is well known, however, a lung which has been compressed for any length of time by an effusion shows great reluctance in assuming its normal condition. It inflates slowly and imperfectly for a long time after the effusion has existed, and therefore the original curve would hardly find a reflexion of itself in the resolving curve.

I am confident that my experiments are very rudimentary, and do not meet the conditions of a lung pendant in the thorax, but I shall be content in presenting this article if it may serve merely as a hint and invitation to others to further prosecute the investigation of the subject.

I believe the observations of Dr. Ellis must increase interest in cases of pleuritic effusion, and be of great value in leading us to a correct diagnosis.

GEORGE W. GARLAND, M.D.

Obituary.

DR. P. A. O'CONNELL.

DR. O'CONNELL was born in Killarney, Ireland, in 1835. In 1837, his family came to America and settled in Boston. His father was a watchmaker by trade, but studied at the Harvard Law School, and practised law for some years in Boston. Dr. O'Connell was fitted for College principally in Montreal and in Boston, and was graduated with honor at Cambridge, in the class of 1857.

Immediately after graduating, he entered upon the study of medicine in the office of Dr. H. G. Clarke, of this city. He took his medical degree in 1860, and his Master's degree at the same time. On the breaking out of the War of the Rebellion in 1861, Dr. O'Connell became connected with the 9th Regiment Mass. Vols. as Assistant Surgeon. He served in this capacity until September, when he resigned and, soon after, was commissioned Surgeon of the 28th Regiment Mass. Vols. He remained with this regiment until the latter part of 1862, in South Carolina, Virginia and Maryland. He was taken prisoner at the second battle of Bull Run, but was released in season to be present at the battle of South Mountain, on which field he was made Brigade Surgeon. After the battle of South Mountain, he was appointed Division Surgeon, though almost the junior surgeon of the corps, both in years and commission.

In June, 1863, he received the appointment of Surgeon of U. S. Vols. and served as Medical Director of Indiana and Michigan. Dr. O'Connell was mustered out of service in August, 1865, and, soon after, received a brevet as Lieut. Colonel, U. S. Vols.

He then engaged in the practice of his profession in Boston, and was, for a time, one of the visiting surgeons of the Carney Hospital. In 1871, he went to Europe, and spent a year in professional studies in Vienna and other of the Continental Schools. He returned in the fall of 1872, with the disease, which ultimately proved fatal, in active progress. Notwithstanding the severity of the disease, he struggled manfully to resist its advances, and engaged, more or less, in business until the last weeks of his life. As a final resort, he went to California in November, but without avail. He died near Santa Barbara, January 6, at the age of 38.

Dr. O'Connell was well and favorably known in Boston as a skilful, intelligent and conscientious physician; a cultivated gentleman; an excellent citizen; but his loss will be most keenly felt by those hosts of friends to whom he had bound himself in his professional and social walks.

Medical Miscellany.

Bowdoin College.—The medical course begins to-day, Dr. Amory delivering the introductory lecture. A large class is expected.

Journal de Therapeutique.—A new French journal having the above title, and edited by Dr. Gubler, was announced to appear in January.

Ranking's Half Yearly Abstract is to be discontinued, its place having been supplanted by other journals conducted on a similar plan, but issued more frequently.

Dr. Henry Miller, President of the Louisville (Kentucky) Medical College, died on the 8th inst. He was a distinguished professor of obstetrics, and had contributed considerable to the literature of that department of medicine.

New Food Adulteration.—In the latest recorded case of food adulteration, eight ounces of mashed potatoes were found inside a roll of country butter.

The Hypodermic Use of Ether has been found beneficial in collapse from hæmorrhage. It is injected till the breath shows its presence. There are no unpleasant local effects.—*The Canada Lancet.*

Adhesive Plaster which has become brittle by age, and has lost its adhesive qualities, may be rendered useful again by coating it with oil of turpentine, by means of a sponge, and leaving it exposed for a day.

Gum Camphor and Hydrate of Chloral, when mixed together in equal proportions, are converted, in the course of a few days, into a clear, colorless liquid.

Honor to Professor Rokitansky.—The Municipal Council of Vienna has resolved to confer the honorary freedom of the city on Professor Rokitansky on the occasion of his attaining his seventieth birth day.

An inquiry into the sanitary state of the town of Cambridge, England, is now being prosecuted by Dr. Buchanan, senior medical inspector of Mr. Simon's staff. Typhoid has prevailed extensively in the town.

Dr. C. E. Brown-Sequard will deliver a course of six lectures in this city on "The Nervous Force: Its Various Modes and Limits of Action." The lectures will be delivered in the hall of the Lowell Institute at 7.30, P.M., the 25th and 28th of the present month, and the 4th, 7th, 11th and 14th of next month.

Dr. S. W. Butler, the editor of the *Philadelphia Medical and Surgical Reporter*, recently died of phthisis. He was well known as a zealous and enterprising medical editor, and, besides his labors in this direction, he has of late years interested himself greatly in the publication of various medical works, of which the *Half Yearly Compendium* is the best known.

Aromatic Candles.—The latest novelty in the way of pharmaceutical applications is a candle impregnated with some aromatic substances, such as benzoic acid or styrax. When the candle is lighted, the surrounding air is quickly impregnated with balsamic vapors, which, it is thought, will afford relief to many cases of irritation of the pulmonary mucous membrane, as well as to bronchial spasm.

Subcutaneous Injection in 1664.—"With Mr. Pierce, the surgeon, to see an experiment of killing a dog, by letting opium into his hind leg. He and Dr. Clarke did fail mightily in hitting the vein, and in effect did not do the business after many trials; but with the little they got in, the dog did presently fall asleep, and so lay till we cut him up."—*Pepys's Diary*, vol. ii. p. 126.

NOTES AND QUERIES.

Will some one inform a subscriber what croton chloral hydrate is? It is spoken of in English papers.

Milk of Magnesia.

Messrs. Editors,—In the Journal of Dec. 11th, you published a short note from me concerning the above-named preparation, which I had not then seen. Since you were kind enough to send me a bottle of the article, received directly from the manufacturer, I have taken occasion to examine it. Before making any further comments, I will quote the first sentence from their handbill:—

"This preparation is a combination of *Pure Magnesia* with *Pure Water*, 'by a new process,' and, having the necessary fluidity, is termed, in scientific language, *Hydrate of Magnesia*."

The article is, in no chemical sense, a combination of *pure magnesia* with *pure water*, and is *not*, in scientific language, termed hydrate of magnesia, because it has the necessary fluidity. It is *not* a new preparation, but has been spoken of years ago as an antidote to arsenious acid, of less value than the hydrated sesquioxyd of iron. I know nothing of any new process for making it, but any one can make the same *mixture* by simply decomposing a solution of Epsom salts with water of ammonia, and washing the precipitate. It is possible that "infants take it like milk," but they will be long fatting upon it, and it will not keep so well as the fluid magnesia of Dunbar. The contents of the bottle received from you began to precipitate before it was opened, and the precipitate will not dissolve in either water or milk to any extent.

This matter you may deem of no consequence, but it as well to put the facts forward, before some of our easily persuaded brethren are induced to allow their names to be paraded in public as its admirers. * * *

Phosphorus Pills.

Messrs. Editors,—Having seen a notice in your Journal of January 22, 1874, over signature of "Pills," asserting that the pills of phosphorus manufactured by us contained no phosphorus, several careful examinations were made of *single* pills taken at random from our stock, each pill containing one sixtieth of a grain of phosphorus. In every case, the presence of *free* phosphorus was unequivocally demonstrated by the well-known test of Mitscherlich. As the phosphorus is dissolved in bisulphide of carbon before dissemination with the excipient forming the pill, amorphous phosphorus cannot be present.

Respectfully, Bullock & Crenshaw.

The experiment demonstrating the *free* presence of phosphorus in pills manufactured by Bullock & Crenshaw was made in our presence. A *single pill*, containing one sixtieth of a grain of phosphorus, gave satisfactory evidence of the presence of free phosphorus.

Robert Bridges, M.D., *Prof. of Chemistry, Phila. Coll. of Phar.*
John J. Reese, M.D., *Prof. of Med. Juris. and Toxicol., Univ. Penn.*
Philadelphia, February 5, 1874.

Mortality in Massachusetts.—*Deaths in seventeen Cities and Towns for the week ending February* 7, 1874.

Boston, 135; Worcester, 15; Lowell, 19; Milford, 4; Chelsea, 6; Salem, 6; Lawrence, 16; Springfield, 7; Lynn, 15; Gloucester, 4; Fitchburg, 7; Taunton, 7; Newburyport, 3; Somerville, 3; Fall River, 15; Haverhill, 5; Holyoke, 6. Total, 273.

Prevalent Diseases.—Consumption, 57; pneumonia, 27; scarlatina, 24.

Deaths from scarlatina were reported as follows:—Boston 6, Fall River 6, Lynn 4, Lowell and Chelsea 2 each, and four other cities 1 each.

GEORGE DERBY, M.D.,
Secretary of the State Board of Health.

Deaths in Boston for the week ending Saturday, Feb. 14th, 147. Males, 80; females, 67. Accident, 7; abscess, 1; apoplexy, 1; asthma, 1; aneurism, 2; inflammation of the bowels, 1; bronchitis, 3; congestion of the brain, 2; disease of the brain, 10; cystitis, 1; cancer, 2; consumption, 30; convulsions, 1; croup, 1; debility, 5; diarrhœa, 2; dropsy, 1; dropsy of the brain, 1; diphtheria, 2; erysipelas, 4; scarlet fever, 11; typhoid fever, 3; gastritis, 1; gangrene, 1; hernia, 1; disease of the heart, 4; disease of the hip, 1; disease of the kidneys, 2; disease of the liver, 2; congestion of the lungs, 4; inflammation of the lungs, 17; laryngitis, 1; marasmus, 2; malformation of heart, 1; old age, 2; paralysis, 1; premature birth, 3; peritonitis, 2; puerperal disease, 1; rheumatism, 1; scrofula, 1; rupture of the spleen, 1; disease of the spine, 1; tumor, 1; whooping cough, 1; unknown, 3.

Under 5 years of age, 48; between 5 and 20 years, 10; between 20 and 40 years, 33; between 40 and 60 years, 23; over 60 years, 33. Born in the United States, 95; Ireland, 30; other places, 22.